Remarks

Claims 1, 2, 5-11, and 14-19 are in the application. Claims 1 and 11 are in independent form. Claims 3, 4, 12, 13, and 20-30 have been cancelled Reconsideration is requested.

Claim 30 is objected to as incorrect referencing of its dependency. Claim 30 has been cancelled.

Claims 1, 3, 10, 20, 21, 28 and 29 -30 are rejected under 35 USC 102(b) for anticipation by House (US Pat. No. 4,809,338). Claims 1, 2, 8, 10, 11, 17, 19, 20, 26, 28, and 29 are rejected under 35 USC 102(b) for anticipation by Konno (US Pat. No. 5,305,388). Claims 4-7, 12-16, 22-25, and 30 are rejected under 35 USC 103(a) for obviousness over Konno in view of Fosgate (US Pat. No. 5,263,087). Applicant responds as follows.

Independent claim 1 has been amended to include the subject matter of claims 3 and 4, which have been cancelled. Likewise, Independent claim 11 has been amended to include the subject matter of claims 12 and 13, which have been cancelled. Claims 20-30 have been cancelled.

Claim 1 recites:

> a dynamic bass equalization circuit with a second or higher order active filter having a dynamically adjusted gain and frequency response that vary with the amplitude of the audio electrical signal, the active filter including an amplifier with a negative feedback path that includes a parallel pair of opposed diodes that provide the dynamically adjusted gain and frequency response.

Claim 11 recites analogous subject, but further recites that the second or higher order active filter is a Sallen-Key high pass filter. Applicant submits that claims 1 and 11, and their dependent claims, are patentably distinct from the cited references for the following reasons.

Konno describes a bass compensation circuit that includes a "second-order positive feedback type high-pass filter." The bass compensation circuit of Konno includes a variable resistor 10 for volume control that is coupled to a

variable resistor 8 connected to the input terminal of the "second-order positive feedback type high-pass filter." Bass compensation is changed such that increasing the sound volume with variable resistor 10 reduces the resistance of variable resistor 8. (Konno, col. 4, lines 5-11.)

Konno achieves bass compensation by coupling a pair of variable resistors 8 and 10 together. The variable resistance of resistor 8 is dependent upon that mechanical coupling and the resolution of the of the resistance variability in resistor 8. Konno provides no teaching or suggestion of a second-order positive feedback type high-pass filter "with a negative feedback path that includes a parallel pair of opposed diodes that provide the dynamically adjusted gain and frequency response," as recited in the independent claims.

Fosgate is cited as disclosing "a negative feedback path with a parallel pair of opposed diodes (D401 and D402) in order to perform a logging function and yield improved accuracy." The Examiner concludes that it would have been obvious to combine the diodes (D401, D402) in the negative feedback path of Fosgate with the bass compensation circuit of Konno. Applicant submits that the cited references do not properly teach or suggest the combination proposed by the Examiner and that claim 1 and 11 and their dependent claims are patentably distinct for the following reasons.

Fosgate is directed to a time constant processing circuit for a surround-sound audio processor. The reversed diodes D401, D402 referenced by the Examiner are included in a log ratio detector 61 that operates with another log ratio detector to determine the ratio of left to right and front to back information included in a stereo signal. (Fosgate, col., 7, lines 57-63.) There is no suggestion that the log ratio detector 61 functions remotely in the manner of a "second-order positive feedback type high-pass filter," as recited by Konno. Moreover, there is no suggestion that the determination of the ratio of left to right and front to back information included in a stereo signal is remotely related to operation of a bass compensation circuit, as described by Konno.

The cited references lack any teaching or suggestion to modify the "second-order positive feedback type high-pass filter" of Konno to include the diode pair of Fosgate. The bass compensation of Konno and the directional sound sensing of Fosgate are entirely unrelated audio issues. There is no suggestion why the log ratio detection of the Fosgate circuit would even be relevant to the bass compensation circuit of Konno. Applicant submits, therefore, that the combination of Konno and Fosgate is improper for lack of a teaching or suggestion to combine the references for any reason that is relevant the bass compensation functionality of Konno.

Moreover, Konno achieves bass compensation with a pair of coupled variable resistors. Fosgate is directed to a log ratio detector to distinguish left and right and front and back audio information. The coupled resistors of Konno would lead one skilled in the art away from using a parallel pair of opposed diodes from a log ratio detector in a surround sound audio system. Applicant submits, therefore, that independent claims 1 and 11, and their dependent claims, are patentably distinct from Konno, either alone or in combination with Fogsate.

House is cited as teaching "a dynamic bass equalization circuit with a second or higher order active filter" that further includes a pair of reversed diodes. Applicant notes that there is no description of the amplifier circuitry in the power amplifier integrated circuit 54 of House. As a consequence, House provides no description that teaches or shows "a second or higher order active filter." Moreover, the reversed diodes of House referenced by the Examiner are part of a full-wave bridge rectifier. There is no teaching or suggestion that the diodes of the full-wave bridge rectifier are included in the negative feedback path of a second or higher order active filter. Applicant submits, therefore, that independent claims 1 and 11, and their dependent claims, are patentably distinct from House.

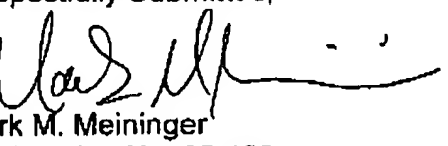
The bass equalization circuit of the present invention achieves improved dynamic adjustment and gain and frequency response with a parallel pair of

opposed diodes in an amplifier negative feedback path. There is no teaching or suggestion in the cited references of improving dynamic adjustment and gain and frequency response with a parallel pair of opposed diodes in an amplifier negative feedback path. Applicant submits, therefore, that independent claims 1 and 11, and their dependent claims, are patentably distinct from the cited references and should be allowed.

Applicant believes the application is in condition for consideration and respectfully requests the same.

IPSOLON LLP
111 SW COLUMBIA #710
PORTLAND, OREGON 97201
TEL. (503) 249-7066
FAX (503) 249-7068

Respectfully Submitted,



Mark M. Meininger
Registration No. 32,428